



3 4456 0378082 5

ORNL

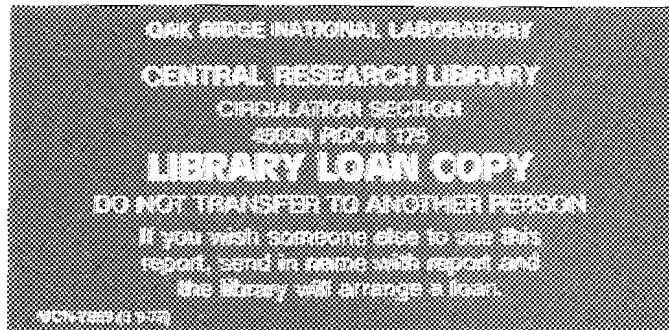
ORNL/TM-12625

OAK RIDGE  
NATIONAL  
LABORATORY

MARTIN MARIETTA

**Atom Probe Field Ion Microscopy  
and Related Topics:  
A Bibliography 1992**

K. F. Russell  
R. D. Godfrey  
M. K. Miller



MANAGED BY  
MARTIN MARIETTA ENERGY SYSTEMS, INC.  
FOR THE UNITED STATES  
DEPARTMENT OF ENERGY

This report has been reproduced directly from the best available copy.

Available to DOE and DOE contractors from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, TN 37831; prices available from (615) 576-8401, FTS 626-8401.

Available to the public from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161.

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

ORNL/TM-12625

1/94

Metals and Ceramics Division

ATOM PROBE FIELD ION MICROSCOPY AND RELATED TOPICS:  
A BIBLIOGRAPHY 1992

K. F. Russell  
R. D. Godfrey  
M. K. Miller

Date Published: December 1993

Prepared for the  
DOE Office of Basic Energy Sciences  
KC 02 01 01 0

Prepared by the  
OAK RIDGE NATIONAL LABORATORY  
Oak Ridge, Tennessee 37831-6285  
managed by  
MARTIN MARIETTA ENERGY SYSTEMS, INC.  
for the  
U.S. DEPARTMENT OF ENERGY  
under contract DE-AC05-84OR21400



3 4456 0378082 5



## PREFACE

This bibliography, covering the period 1992, includes references related to the following topics: atom probe field ion microscopy (APFIM), field emission (FE), and field ion microscopy (FIM). Technique-orientated studies and applications are included.

Previous publications containing the papers published prior to this period are as follows:

<i>Atom Probe Field-ion Microscopy and Related Topics: A Bibliography 1978-1987</i>	M.K. Miller and A.R. McDonald	ORNL/TM-11157
<i>Atom Probe Field-Ion Microscopy and Related Topics: A Bibliography 1988</i>	M.K. Miller and A.R. Hawkins	ORNL/TM-11370
<i>Atom Probe Field Ion Microscopy and Related Topics: A Bibliography 1989</i>	M.K. Miller, A.R. Hawkins, and K.F. Russell	ORNL/TM-11696
<i>Atom Probe Field Ion Microscopy and Related Topics: A Bibliography 1990</i>	K.F. Russell and M.K. Miller	ORNL/TM-12005
<i>Atom Probe Field Ion Microscopy and Related Topics: A Bibliography 1991</i> published by Oak Ridge National Laboratory, Oak Ridge, TN 37831-6285 and	K.F. Russell and M.K. Miller	ORNL/TM-12223
<i>Field-Ion Microscopy and Related Techniques, A Bibliography: 1951-1978</i> published by Warwick, Birmingham	R.E. Thurstans and J.M. Walls	

The references contained in this document were compiled from a variety of sources including computer searches and personal lists of publications. To reduce the length of this document, the references have been reduced to the minimum necessary to locate the articles. The references, listed alphabetically by authors, are subdivided into the categories listed in paragraph one above. An *Addendum* of references missed in previous bibliographies is included.

We would like to thank Dr. G. D. W. Smith of Oxford University and M. B. Alexander of the ORNL Central Library for their stoic efforts in the preparation of this document.

Research sponsored by the Division of Materials Sciences, U.S. Department of Energy, under contract DE-AC05-84OR21400 with Martin Marietta Energy Systems, Inc.

K. F. Russell, R. D. Godfrey and M. K. Miller  
Metals and Ceramics Division



## CONTENTS

1992

Atom Probe Field Ion Microscopy .....	3
Field Emission Microscopy .....	13
Field Ion Microscopy .....	23
ADDENDUM .....	27
APPENDIX .....	31



*1992*



1	Atom-phase data analysis by the Ising model and its application to an aluminum-zinc alloy	Abe, T.	Scr. Metall. Mater. (1992) <u>26</u> , 1359-64
2	Chemical analysis of composite precipitate in aged aluminum-lithium-zirconium alloys by an atom-probe field-ion microscope	Abe, T.	Scr. Metall. Mater. (1992) <u>26</u> , 1143-47
3	Thermal equilibrium concentration fluctuations above the critical temperature in a Ni-Cu alloy	Abe, T.	Acta Metall. Mater. (1992) <u>40</u> , 1951-9
4	Time evolution of composition profiles in alloys	Abe, T. Soffa, W.A.	Surf. Sci. (1992) <u>266</u> , 453-7
5	Analysis of silicon oxides by field-ion microscope and atom-probe method	Adachi, T. Ariyasu, T.	Koon Gakkaishi (1992) <u>18</u> , 164-76
6	The early stages of decomposition of Al-Li alloys	Al-Kassab, T. Menand, A. Chambrelard, S. Haasen, P.	Surf. Sci. (1992) <u>266</u> , 333-6
7	Field dependence of hydrogen adsorption	Andrén, H.-O. Rolander, U.	Surf. Sci. (1992) <u>266</u> , 76-80
8	High-resolution microscopy of the discontinuous precipitation	Beber, G.P. Haasen, P.	Surf. Sci. (1992) <u>266</u> , 328-32
9	The role of atom-probe techniques in the investigation of some selected metallurgical problems	Blavette, D.	Surf. Sci. (1992) <u>266</u> , 299-309
10	Surface reactions on an atomic scale. Field desorption with field and photon pulses	Block, J.H. Chuah-Jaenicke, G.K. Kruse, N.	ACS Symp. Ser. (1992) <u>482</u> , (Surf. Sci. Catal.) 287-309
11	APFIM characterisation of the spinodal decomposition in duplex stainless steels	Brown, J.E. Smith, G.D.W. Pumphrey, P.H. Miller, M.K.	Fifth Int. Symp. on Environmental Degradation of Materials in Nuclear Power Systems-Water Reactors, Monterey, CA, 1992, E. Simonen, ed., American Nuclear Society, LaGrange Park, IL (1992) 319-26
12	FIM-atom probe: observation and analysis on the subnanometric scale of grain boundaries in a boron-doped nickel base superalloy	Buchon, A. Blavette, D.	C. R. Acad. Sci., Ser. II (1992) <u>315</u> , 279-84

*Atom Probe Field Ion Microscopy*

- 13 Visualisation of three-dimensional microstructures Cerezo, A.  
Hetherington, M.G.  
Hyde, J.M.  
Miller, M.K.  
Smith, G.D.W.  
Underkoffler, J.S. Surf. Sci. (1992) 266, 471-80
- 14 New dimensions in atom-probe analysis Cerezo, A.  
Hyde, J.M.  
Miller, M.K.  
Beverini, G.  
Setna, R.P.  
Warren P.J.  
Smith, G.D.W. Surf. Sci. (1992) 266, 481-93
- 15 Atomistic modeling of diffusional phase transformations Cerezo, A.  
Hyde, J.M.  
Miller, M.K.  
Petts, S.C.  
Setna, R.P.  
Smith, G.D.W. Philos. Trans. R. Soc. London (1992) A341, 313-26
- 16 An atom-probe study of retained austenite in ferritic weld metal Chandrasekharaiah, M.N.  
Dubben, G.  
Kolster, B.H. Weld. Res., Published in: Weld. J. (Miami) (1992) 71(7), S247-9
- 17 The segregation of carbon atoms to dislocations in low-carbon martensites: Studies by field ion microscopy and atom probe microanalysis Chang, L.  
Barnard, S.J.  
Smith, G.D.W. Fundamentals of Aging and Tempering in Bainitic and Martensitic Steel Products, G. Krauss and P.E. Repas, eds., The Iron and Steel Society, Warrendale, PA (1992) 19-28
- 18 An atom-probe investigation of some correlated phase transformations in Cr, Ni, Mo containing supersaturated ferrites Danoix, F.  
Auger, P.  
Blavette, D. Surf. Sci. (1992) 266, 364-9
- 19 Some new aspects on microstructural and morphological evolution of thermally aged duplex stainless steels Danoix, F.  
Deconihout, B.  
Bostel, A.  
Auger, P. Surf. Sci. (1992) 266, 409-15
- 20 Performance of an energy compensated time-of-flight mass spectrometer Deconihout, B.  
Menand, A.  
Bouet, M.  
Sarrau, J.M. Surf. Sci. (1992) 266, 523-8
- 21 Electron stimulated field desorption of field adsorbed neon and helium from tungsten Dirks, J.  
Drachsel, W.  
Block, J.H. Surf. Sci. (1992) 266, 62-9

- 22 Simultaneous field desorption of  $^3\text{He}$  and  $^4\text{He}$  Drachsel, W. Surf. Sci. (1992) 266, 40-5  
Dirks, J.  
Block, J.H.
- 23 Micro-analysis of welds using the field-ion microscope/atom probe Dubben, G. J. Mater. Sci. (1992) 27, 3192-6  
Chandrasekharaiyah, M.N.  
Kolster, B.H.
- 24 The new Göttingen atom probe Fischmeister, H.F. Z. Metallkd. (1992) 83, 449-56
- 25 Kinetics of field evaporation during hydride formation on GaP surfaces: a FIM and atom-probe study Gaussmann, A. Langmuir (1992) 8, 125-9  
Drachsel, W.  
Block, J.H.
- 26 Aging behaviour of cobalt free chromium containing maraging steels Gemperle, A. Mater. Sci. Technol. (1992) 8, 546-54  
Gemperlová, J.  
Sha, W.  
Smith, G.D.W.
- 27 Solid-state mass spectrometry for materials science Grasserbauer, M. Pure Appl. Chem. (1992) 64, 485-95
- 28 Ultra-high-resolution chemical analysis by field-ion microscopy, atom probe and position-sensitive atom-probe techniques Grovenor, C.R.M. Ultramicroscopy (1992) 47, 199-211  
Smith, G.D.W.  
Cerezo, A.  
Liddle, J.A.  
MacKenzie, R.A.D.  
Warren, P.J.  
Setna, R.P.  
Hyde, J.M.  
Brown, J.E.  
Stark, I.  
Shollock, B.A.
- 29 High-resolution microscopy and early-stage precipitation kinetics Haasen, P. Metall. Trans. A (1992) 23, 1901-14  
Wagner, R.
- 30 Atom-probe and TEM study of the isothermal  $\omega$  and secondary  $\alpha$  phases in a Ti-10 V-2 Fe-3 Al alloy Hadjadj, L. Microsc. Microanal. Microstruct. (1992) 3, 471-82  
Champagnac, M.H.  
Vassel, A.  
Menand, A.
- 31 Structural analysis with the position sensitive atom probe Hetherington, M.G. Surf. Sci. (1992) 266, 463-70  
Cerezo, A.  
Hyde, J.M.  
Smith, G.D.W.
- 32 Atom probe study of early stage phase decomposition in an aluminum-7.8 at.% lithium alloy Hono, K. Acta Metall. Mater. (1992) 40, 3027-34  
Babu, S.S.  
Hiraga, K.  
Okano, R.  
Sakurai, T.

*Atom Probe Field Ion Microscopy*

33	Determination of site occupation probability of copper in nickel aluminide ( $Ni_3Al$ ) by atom-probe field ion microscopy	Hono, K. Chiba, A. Sakurai, T. Hanada, S.	Acta Metall. Mater. (1992) <u>40</u> , 419-25
34	The IMR atom probe	Hono, K. Hashizume, T. Sakurai, T.	Surf. Sci. (1992) <u>266</u> , 506-12
35	Microstructures of $Fe_{73.5}Si_{13.5}B_9Nb_3Cu_1$ nanocrystalline soft magnetic material investigated by APFIM and HRTEM	Hono, K. Hiraga, K. Wang, Q. Inoue, A. Sakurai, T.	Surf. Sci. (1992) <u>266</u> , 385-90
36	The microstructure evolution of a $Fe_{73.5}Si_{13.5}B_9Nb_3Cu_1$ nanocrystalline soft magnetic material	Hono, K. Hiraga, K. Wang, Q. Inoue, A. Sakurai, T.	Acta Metall. Mater. (1992) <u>40</u> , 2137-47
37	Direct evidence for compositional fluctuation in sputtered Co-Cr thin films	Hono, K. Maeda, Y. Li, J.-L. Sakurai, T.	J. Magn. Magn. Mater. (1992) <u>110</u> , L254-8
38	Determination of site preference of Cu and Ge in $Ni_3Al$	Hono, K. Numakura, H. Szabó, I.A. Chiba, A. Sakurai, T.	Surf. Sci. (1992) <u>266</u> , 358-63
39	Analysis of structure and chemical composition with atomic resolution by atom-probe field ion microscope	Hono, K. Sakurai, T.	Shinsozai (1992) <u>3</u> , 82-7
40	Nano-scale characterization of materials by atom probe field ion microscopy	Hono, K. Sakurai, T.	Keikinzoku (1992) <u>42</u> , 236-47
41	A preliminary atom-probe FIM study of aluminum-lithium-X alloys	Hono, K. Sano, N. Sakurai, T.	KEK Proc., 91-16 (Workshop Phase Sep. Ordering, 1st, 1990) (1992) 26-8
42	Quantitative atom-probe analysis of some aluminum alloys	Hono, K. Sano, N. Sakurai, T.	Surf. Sci. (1992) <u>266</u> , 350-7
43	Relationship of chemical composition and structure on an atomic scale for metal/metal interfaces: The W(Re) System	Hu, J. Seidman, D.H.	Scr. Metall. Mater. (1992) <u>27</u> , 693-8

44	Electropolishing of polycrystalline $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ to meet the need for sharp needle geometry	Hu, Q.-H. Alarco, J.A.	Surf. Sci. (1992) <u>266</u> , 538-44
45	Three-dimensional characterization and modelling of spinodally decomposed iron-chromium alloys	Hyde, J.M. Cerezo, A. Hetherington, M.G. Miller, M.K. Smith, G.D.W.	Surf. Sci. (1992) <u>266</u> , 370-7
46	Atomic scale observations of the chemical composition of a metal/ceramic interface	Jang, H. Seidman, D.N.	Scr. Metall. Mater. (1992) <u>26</u> , 1493-8
47	An APFIM analysis of grain boundaries and precipitation in boron-doped NiAl	Jayaram, R. Miller, M.K.	Surf. Sci. (1992) <u>266</u> , 310-5
48	An APFIM investigation of the role of boron in precipitates and at boundaries in NiAl	Jayaram, R. Miller, M.K.	Proc. "Structure and Properties of Interfaces in Materials," Materials Research Society Fall '91 Meeting, Boston, MA, W.A.T. Clark, U. Dahmen and C. L. Briant, eds., Materials Resarch Society, Pittsburgh, PA (1992) <u>238</u> , 445-50
49	An APFIM/TEM study of crept model Ni-Mo-Ta-Al superalloys	Jayaram, R. Miller, M.K.	Surf. Sci. (1992) <u>266</u> , 316-21
50	An atom probe field ion microscope characterization of precipitates in a model vanadium alloy	Jayaram, R. Miller, M.K.	Scr. Metall. Mater. (1992) <u>27</u> , 77-82
51	An atom probe field ion microscope investigation of $\gamma$ - $\gamma$ interfaces in a model nickel-based superalloy	Jayaram, R. Miller, M.K.	Proc. 50th Annual Meeting of the Electron Microscopy Society of America, Boston, MA, G.W. Bailey, J. Bentley, and J. A. Small , eds., San Francisco Press, San Francisco, CA (1992) 176-7
52	Microstructural changes during overtempering of high-speed steels	Karagöz, S. Fischmeister, H.F. Andrén, H.-O. Guang-Jun, C.	Metall. Trans. (1992) <u>23A</u> , 1631-40
53	The kinetics of intermetallic phase formation in duplex stainless weld metals and their influence on mechanical properties	Karlsson, L. Pak, S. Bengtsson, L. Rolander, U.	Proc. Int. Conf. Applications of Stainless Steel '92, Kista, Stockholm, Sweden, June 9-11, 1992, ASM International, Materials Park, OH

*Atom Probe Field Ion Microscopy*

54	An atom-probe FIM study of interphase precipitation in a model alloy steel	Khalid, F.A. Edmonds, D.V.	Surf. Sci. (1992) <u>266</u> , 424-32
55	Microanalytical evaluation of a prototype stainless bearing steel	Kinkus, T.J. Olson, G.B.	Surf. Sci. (1992) <u>266</u> , 391-6
56	Characterization of precipitates in HSLA steels	Kneissl, A.C. Garcia, C.I. DeArdo, A.J.	Proc. Int. Conf. HSLA Steels, G. Tither and S. Zhang, eds., Miner. Met. Mater. Soc., Warrendale, PA (1992) 99-105
57	Systematic procedures for atom-probe field-ion microscopy studies of grain-boundary segregation	Krakauer, B.W. Seidman, D.N.	Rev. Sci. Instrum. (1992) <u>63</u> , 4071-9
58	Effects of microchemistry and precipitate size on nodular corrosion resistance of Zircaloy-2	Kruger, R.M. Adamson, R.B. Brenner, S.S.	J. Nucl. Mater. (1992) <u>189</u> , 193-200
59	Atom probe examination of thermally aged CF8M cast stainless steel	Leax, T.R. Brenner, S.S. Spitznagel, J.A.	Metall. Trans. A (1992) <u>23</u> , 2725-36
60	Atom-probe field ion microscopy	Leisch, M.	Mikrochim. Acta (1992) <u>107</u> , 95-104
61	A combined time-of-flight spectrometer using field desorption and ion impact sputtering	Leisch, M. Rendulic, K.D.	Surf. Sci. (1992) <u>266</u> , 517-22
62	Phase coherence in atomic vibration in field dissociation of field desorbed diatomic ions	Liu, J. Wu, C. Tsong, T.T.	Phys. Rev. B (1992) <u>45</u> , 3659-68
63	Recoil dissolution of $\beta$ -precipitates in Ni-12at%Be alloy under electron irradiation	Liu, Z.G. Al-Kassab, T.	Phys. Stat. Sol. A (1992) <u>131</u> , 429-35
64	Microchemical and microstructural investigations on two-phase intermetallic titanium-aluminum (TiAl/Ti <sub>3</sub> Al) alloys by field ion microscopy and atom probe (APFIM)	Liu, Z.G. Frommeyer, G. Kreuss, M.	Phys. Stat. Sol. A (1992) <u>131</u> , 495-508
65	The interface structure of the $\beta$ -precipitates in Ni-12 at% Be alloy	Liu, Z.G. Zheng, J.G. Li, Q. Feng, D.	Phys. Stat. Sol. A (1992) <u>131</u> , 523-8

66	A study of phase separation in copper-nickel alloys by AP-FIM	Lopez, H.V.M. Sakurai, T. Hirano, K.	Scr. Metall. Mater. (1992) <u>26</u> , 99-103
67	Atom-probe investigation of a creep resistant 12% chromium steel	Lundin, L. André, H.-O.	Surf. Sci. (1992) <u>266</u> , 397-401
68	Characterisation and properties of ultra-fine scale materials	MacKenzie, R.A.D.	Proc. Roy. Microsc. Soc. (1992) <u>27</u> , 191-2
69	The position sensitive atom probe	MacKenzie, R.A.D.	Microscopy and Analysis (1992) <u>28</u> , 17-9
70	Influence of electrostatic fields on binding energy (NO on Rh)	Madenach, R.P. Abend, G. Mousa, M.S. Kreuzer, H.J. Block, J.H.	Surf. Sci. (1992) <u>266</u> , 56-61
71	Philosophy and design of a composition mapping atom probe (COMAP)	MeImed, A.J. Camus, P.P.	Surf. Sci. (1992) <u>266</u> , 513-6
72	Implementation of the optical atom probe	Miller, M.K.	Surf. Sci. (1992) <u>266</u> , 494-500
73	An atom probe field ion microscopy study of neutron-irradiated pressure vessel steels	Miller, M.K. Burke, M.G.	J. Nucl. Mater. (1992) <u>195</u> , 68-82
74	Characterization of copper precipitation in a 17/4 PH steel: A combined APFIM/TEM study	Miller, M.K. Burke, M.G.	Fifth Int. Symp. on Environmental Degradation of Materials in Nuclear Power Systems-Water Reactors, Monterey, CA, 1992, E. Simonen, ed., American Nuclear Society, LaGrange Park, IL (1992) 689-95
75	The miscibility gap in the FeBe system	Miller, M.K. Burke, M.G.	Microsc. Microanal. Microstruct. (1992) <u>3</u> , 387-400
76	Estimation of composition amplitude: $P_a$ and LBM versus $V$	Miller, M.K. Cerezo, A. Hetherington, M.G. Hyde, J.M.	Surf. Sci. (1992) <u>266</u> , 446-52
77	Some factors affecting analysis in the atom probe	Miller, M.K. Jayaram, R.	Surf. Sci. (1992) <u>266</u> , 458-62
78	Grain boundary composition in NiAl	Miller, M.K. Jayaram, R. Camus, P.P.	Scr. Metall. Mater. (1992) <u>26</u> , 679-84

*Atom Probe Field Ion Microscopy*

79	An APPIM investigation of a weathered region of the Santa Catharina meteorite	Miller, M.K. Russell, K.F.	Surf. Sci. (1992) <u>266</u> , 441-5
80	Grain size strengthening in steel and its relationship to the grain boundary segregation of carbon	Mintz, B. Han, K. Smith, G.D.W.	Mater. Sci. Technol. (1992) <u>8</u> , 537-40
81	Field Emission '91. Proc. 38th Intl. Field Emission Symp., Vienna, Austria, 5-9 August 1991. [In: Surf. Sci., (1992) <u>266</u> (1-3)]	Mitterauer, J., ed.	(North-Holland: Amsterdam, Neth.) (1992) 562 pp.
82	Mass-reflectron as an ion energy analyzer	Moskovits, E.V.	Appl. Phys. B (1992) <u>54</u> , 556-61
83	Surface structures observed in atomic level	Nishikawa, O. Tomitori, M.	Kinzoku (1992) <u>62</u> , 42-9
84	Atom-probe study of precipitation in dilute copper-iron-titanium alloys	Pareige, P. Chambreland, S. Blavette, D.	Mem. Etud. Sci. Rev. Metall. (1992) <u>89</u> , 311-6
85	Atom probe analysis and modelling of interfaces in magnetic multilayers	Petford-Long, A.K. Cerezo, A. Hyde, J.M.	Ultramicroscopy (1992) <u>47</u> , 367-74
86	Atom-probe field ion microscope study of surface changes in platinum/rhodium catalyst alloy upon oxidation and reduction treatments	Poulston, S. Smith, G.D.W.	Catalysis and Surface Characterisation, T.J. Dienes, C.H. Rochester and J. Thomson, eds., Royal Society of Chemistry, London, UK (1992) 228-33
87	Study of the structure of oxide interface in the platinum-rhodium alloy by AP-FIM	Ren, D.	Rare Met. (Beijing) (1992) <u>11</u> , 34-8
88	Recent advances in surface analysis	Riviere, J.C.	Analyst (London) (1992) <u>117</u> , 313-22
89	Atom probe studies of early stages of precipitation reactions in maraging steels. I. Co- and Ti-containing C-300 steel	Sha, W. Cerezo, A. Smith, G.D.W.	Scr. Metall. Mater. (1992) <u>26</u> , 517-22
90	Atom probe studies of early stages of precipitation reactions in maraging steels. II. Titanium-free model alloy and cobalt-free T-300 steel	Sha, W. Cerezo, A. Smith, G.D.W.	Scr. Metall. Mater. (1992) <u>26</u> , 523-28

91	Hardening mechanisms in maraging steels	Sha, W. Cerezo, A. Smith, G.D.W.	Proc. IRC-92 Conf. Birmingham, UK, (Sept. 92), M.H. Loretto and C.J. Reeves, eds., Materials and Component Engineering Publications, Birmingham, UK (1992) 879-84
92	Some aspects of atom-probe analysis of Fe-C and Fe-N systems	Sha, W. Chang, L. Smith, G.D.W. Cheng, L. Mittemeijer, E.J.	Surf. Sci. (1992) <u>266</u> , 416-23
93	Atom probe field-ion microscopy study of ageing behaviour of a model Fe-Ni-Co-Mo maraging steel	Sha, W. Smith, G.D.W. Cerezo, A.	Surf. Sci. (1992) <u>266</u> , 378-84
94	A position-sensitive atom probe approach to characterization of aluminum oxide dispersion strengthened copper alloy	Sha, W. Zhu, F.	J. Nucl. Mater. (1992) <u>186</u> , 288-93
95	Three dimensional reconstruction of atomic scale composition with the position sensitive atom probe	Smith, G.D.W. Cerezo, A. Grovenor, C.R.M. Godfrey, T.J. Setna, R.P.	Proc. 50th Annual Meeting of the Electron Microscopy Society of America, Boston, MA, G.W. Bailey, J. Bentley, and J. A. Small , eds., San Francisco Press, San Francisco, CA (1992) 1478-9
96	Intergranular precipitation in Ni-Cr-Fe alloys	Stiller, K.	Surf. Sci. (1992) <u>266</u> , 402-8
97	Isothermal ramped field-desorption of water from metal surfaces	Stintz, A. Panitz, J.A.	J. Appl. Phys. (1992) <u>72</u> , 741-5
98	Further statistical analysis of the composition of a $\Sigma \approx 9/\approx (-1,-1,4)$ grain boundary in a Mo(Re) alloy studied by atom-probe field-ion microscopy	Udler, D. Hu, J. G. Kuo, S.-M. Seki, A. Krakauer, B.,W. Seidman, D.N.	Scr. Metall. Mater. (1992) <u>25</u> , 841-5
99	Oxygen scavenging effect of the $\alpha_2$ phase in the TiAl intermetallic compound	Uemori, R. Hanamura, T. Morikawa, H.	Scr. Metall. Mater. (1992) <u>26</u> , 969-74
100	Estimate of the binding energy of atoms in the lattice of single-crystal high-T <sub>c</sub> semiconductors	Vlasov, Y.A. Golubev, O.L. Kontorovich, E.L. Shrednik, V.N.	Pis'ma Zh. Tekh. Fiz. (1992) <u>18</u> (22), 727

*Atom Probe Field Ion Microscopy*

- 101 Interaction of residual gases with an atomically clean surface of single-crystal EuBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub>  
Vlasov, Y.A.  
Golubev, O.L.  
Kontorovich, E.L.  
Shrednik, V.N.  
Pis'ma Zh. Tekh. Fiz. (1992)  
18(22), 734
- 102 The role of alloy composition in the precipitation behaviour of high speed steels  
Wang, R.  
Andrén, H.-O.  
Wisell, H.  
Dunlop, G.L.  
Acta Metall. Mater. (1992) 40,  
1727-38
- 103 Field-ion microscope/atom-probe analysis of the effect of RRA heat treatment on the matrix strengthening precipitates in alloy Al-7150  
Warren, P.J.  
Grovenor, C.R.M.  
Crompton, J.S.  
Surf. Sci. (1992) 266, 342-9
- 104 APFIM 200 - A reflectron-based atom probe  
Waugh, A.R.  
Richardson, C.H.  
Jenkins, R.  
Surf. Sci. (1992) 266, 501-5
- 105 Ultra-fine structure of a boron-doped Ni<sub>4</sub>Mo alloy  
Yamamoto, M.  
Sugiyama, A.  
Matsushima, H.  
Uemori, R.  
Morikawa, H.  
Surf. Sci. (1992) 266, 322-7
- 106 Atom-probe study of phase decomposition of ferrite during aging in ferritic/austenitic duplex stainless steel  
Yoshimura, T.  
Ishikawa, Y.  
J. Japan. Inst. Metals, Nippon Kinzoku Gakkaishi (1992) 56,  
873-80
- 107 An APFIM/AEM study of phase decompositions in Fe-Ni alloys at low temperatures  
Zhang, J.  
Miller, M.K.  
Williams, D.B.  
Goldstein, J.I.  
Surf. Sci. (1992) 266, 433-40
- 108 FIM atom probe study of an Al<sub>2</sub>O<sub>3</sub> dispersion strengthened copper alloy  
Zhu, F.  
Jiao, L.  
Wanderka, N.  
Wahi, R.P.  
Wollenberger, H.  
Surf. Sci. (1992) 266, 337-41

1	Low temperature thermal oxidation sharpening of microcast tips	Akamine, S. Quate, C.F.	J. Vac. Sci. Technol. B (1992) <u>10</u> , 2307-10
2	Manufacture of field-emission devices, and devices thus obtained	Allaway, M.J. Cade, N.A. Birrell, S.T. Green, P.W.	Eur. Pat. Appl. EP 497509 (1992)
3	Density-gradient analysis of field emission from metals	Ancona, M.G.	Phys. Rev. B (1992) <u>46</u> , 4874-83
4	3D calculations at atomic scale of the electrostatic potential and field created by a teton tip	Atlan, D. Gardet, G. Binh, V.-T. Garcia, N. Sáenz, J.J.	Ultramicroscopy (1992) <u>42-44</u> , 154-62
5	Field effect on electron emission from the deep titanium donor level in indium phosphide	Baber, N. Scheffler, H. Ostmann, A. Wolf, T. Bimberg, D.	Phys. Rev. B: Condens. Matter (1992) <u>45</u> , 4043-7
6	Low-frequency field-emission fluctuation current of the system uranium dioxide-residual gases	Bakhtizin, R.Z. Bobkov, A.F. Gots, S.S. Zaripov, R.F. Lazarev, N.E. Suvorov, A.L. Yumaguzin, Yu.M.	Poverkhnost (1992) <u>2</u> , 29-33
7	Statistical model of semiconductor field emitter	Bakhtizin, R.Z. Ghots, S.S.	Surf. Sci. (1992) <u>266</u> , 121-5
8	Field emission study of germanium thin films on a niobium surface	Bakhtizin, R.Z. Suvorov, A.L. Zaripov, R.F.	Acta Phys. Pol. A (1992) <u>81</u> , 247-55
9	Nonequilibrium effects in high current field emission	Barengolts, S.A. Kreindel, M.Yu. Litvinov, E.A.	Surf. Sci. (1992) <u>266</u> , 126-31
10	Nonequilibrium effects in field electron emission from superconductors	Barengolts, S.A. Litvinov, E.A. Uimanov, I.V.	Surf. Sci. (1992) <u>266</u> , 132-5
11	Surface diffusion parameters for potassium and lithium on tungsten field emitter tip	Beirnat, T. Beben, J. Mclewski, R.	Surf. Sci. (1992) <u>266</u> , 11-7
12	Field-emission microcathode arrays	Betsui, K. Inoue, H. Fukuta, S.	Eur. Pat. Appl. EP 497627 (1992)

*Field Emission Microscopy*

- 13 On the electron and metallic ion emission from nanotips fabricated by field-surface-melting technique: experiments on tungsten and gold tips  
 Binh, V.-T.  
 Garcia, N.  
 Ultramicroscopy (1992) 42-44(Pt. A), 80-90
- 14 Field-emission electron spectroscopy of single-atom tips  
 Binh, V.-T.  
 Garcia, N.  
 Doglioni, J.  
 Phys. Rev. Lett. (1992) 69, 2527-30
- 15 Local heating of single-atom protrusion tips during field electron emission  
 Binh, V.-T.  
 Purcell, S.T.  
 Gardet, G.  
 Garcia, N.  
 Surf. Sci. (1992) 279, L197-201
- 16 New field-emitter switch for ESD protection of microwave circuits  
 Bock, K.  
 Hartnagel, H.L.  
 Electronics Lett. (1992) 28, 1822-4
- 17 Vacuum microelectronics  
 Brodie, I.  
 Spindt, C.A.  
 Advances in Electronics and Electron Physics, I. Brodie and C.A. Spindt, eds., Academic Press, Inc., New York (1992) 83, 106
- 18 Gated field emitter failures: experiment and theory  
 Browning, J.  
 McGruer, N.E.  
 Meassick, S.  
 Chan, C.  
 Bintz, W.J.  
 Gilmore, M.  
 IEEE Trans. Plasma Sci. (1992) 20, 499-506
- 19 Collector-induced field emission triode  
 Busta, H.H.  
 Jenkins, D.W.  
 Zimmerman, B.J.  
 Pogemiller, J.E.  
 IEEE Trans. Electron Dev. (1992) 39, 2616-20
- 20 Point sources of electrons and ions using microprotrusion on the top of a tip  
 Butenko, V.G.  
 Vlasov, Yu.A.  
 Golubev, O.L.  
 Shrednik, V.N.  
 Surf. Sci. (1992) 266, 165-9
- 21 Fabrication of biologically based microstructure composites for vacuum field emission  
 Chow, G.M.  
 Stockton, W.B.  
 Price, R.  
 Baral, S.  
 Ting, A.C.  
 Ratna, B.R.  
 Shoen, P.E.  
 Schnur, J.M.  
 Bergeron, G.L.  
 Czarnaski, M.A.  
 Hickman, J.J.  
 Kirkpatrick, D.A.  
 Mater. Sci. Eng. (1992) A158, 1-6

22	Temperature dependence of the preexponential factors of the field emission flicker noise cross-correlation function for potassium on tungsten(110)	Dabrowski, A.M. Kleint, C.	Acta Phys. Pol., A (1992) <u>81</u> , 583-8
23	A study of time and space correlations in field emission current fluctuations with a fiber-optical technique	Dadykin, A.A. Naumovets, A.G.	Acta Phys. Pol., A (1992) <u>81</u> , 131-43
24	Noise in field-induced electron emission from graphite composite: spectral density and autocorrelation investigations	Dharmadhikari, C.V. Khairnar, R.S. Joag, D.S.	J. Phys. D: Appl. Phys. (1992) <u>25</u> , 125-30
25	The thermal faceting of surfaces by low coverage adsorption	Drechsler, M.	Surf. Sci. (1992) <u>266</u> , 1-10
26	Mechanisms responsible for instability of a field emission cathode surface morphology	Eremchenko, D.V. Makhov, V.I.	Surf. Sci. (1992) <u>266</u> , 163-4
27	Field-emission arrays and their fabrication	Feist, W.M. Stacey, W.F.	Eur. Pat. Appl. (Patent) EP 520780 (1992)
28	Manufacture of field-emitting cathode and vacuum transistor	Fukui, T. Ando, S.	Jpn. Kokai Tokkyo Koho. (Patent) JP 04137434 (1992)
29	Formation of an atomic source for metal ions by superficial fusion in an electric field	Garcia Garcia, N. Binh, V.-T.	Span. (Patent) ES 2029426 (1992)
30	100 kV field emission electron optics for nanolithography	Gesley, M.	J. Vac. Sci. Technol. B (1992) <u>10</u> , 2451-8
31	Computer simulation of kinetic processes near a semiconductor surface at a high electric field using the particle method	Gherm, V.E. Mileshkina, N.V. Semykina, E.A.,	J. Phys.: Condens. Matter (1992) <u>4</u> , 1545-54
32	Thermofield tip formation in UHV/STM combined with field-emission microscope	Golubok, A.O. Masalov, S.A. Tarasov, N.A.	Ultramicroscopy (1992) <u>42-44</u> (Pt. B), 1574-9
33	Current stochasticity of field emission of charge from traps in the transition layer of implanted MIS structures	Gomenyuk, Yu V. Litovski, R.N. Lysenko, V.S. Osiyuk, I.N. Tyagul'skii, I.P.	Appl. Surf. Sci. (1992) <u>59</u> , 91-4
34	Surface self-diffusion studies on the W(112) plane by the field emission method	Gong, Y.-M.	Surf. Sci. (1992) <u>266</u> , 30-4

*Field Emission Microscopy*

- 35 Oxygen-induced buildup of W(100) and W(111) planes Gong, Y.-M.  
Leng, R.-H. Solid State Communications (1992) 84, 1085-88
- 36 Tunneling dynamics in stationary field emission Gottlieb, B.  
Kleber, M. Ann. Physik (1992) 1, 369-79
- 37 Time-dependent theory of charge transfer in the field ionization process at surfaces Gründler, W. Surf. Sci. (1992) 266, 137-40
- 38 Surface composition of silicon-tantalum disilicide eutectic cathodes and its effect on vacuum field emission Hickman, J.J.  
Bergeron, G.  
Czarnaski, M.  
Kirkpatrick, D.A. Appl. Phys. Lett. (1992) 61, 2518-20
- 39 Anisotropy in surface diffusion of gallium atoms on a germanium(001) plane at the apex of a field-emission tip Honda, T.  
Okano, T. Appl. Surf. Sci. (1992) 60-61, 260-5
- 40 Manufacture of niobium carbide field emitter Ishizawa, Y.  
Aizawa, T.  
Otani, S. Jpn. Kokai Tokkyo Koho.  
(Patent) JP 04061724 (1992)
- 41 Electric field-emitting cathode Ito, S.  
Tonegawa, T.  
Niiyama, T. Jpn. Kokai Tokkyo Koho.  
(Patent) JP 04087233 (1992)
- 42 Field emitter arrays for vacuum microelectronics Itoh, J.  
Tsuburaya, K.  
Kanemaru, S. Technical Digest of the 11th Sensor Symposium (1992) 143-8
- 43 Low-operation-voltage comb-shaped field emitter array Itoh, J.  
Tsuburaya, K.  
Kanemaru, S.  
Watanabe, T.  
Itoh, S. Jpn. J. Appl. Phys. (1992) 31, 884-6
- 44 Making a field-emission electron source employing a diamond coating Jaskie, J.E.  
Kane, R.C. U.S. Patent No. 5141460 (1992)
- 45 A comparison of the transmission coefficient and the Wigner function approaches to field emission Jensen, K.L.  
Ganguly, A.K. COMPEL - Comp. and Math in Elec. and Elect. Eng. (1992) 4, 457-70
- 46 Field emission from silicon emitters Johnston, R.  
Miller, A.J. Surf. Sci. (1992) 266, 155-62
- 47 Microelectronic field emitter Jones, G.W.  
Sune, C.T. U.S. Patent No. 5144191 (1992)
- 48 Silicon field emission transistors and diodes Jones, G.W.  
Sune, C.T.  
Gray, H.F. IEEE Transactions on Components, Hybrids and Manufacturing Technology (1992) 15, 1051-5

49	Microstructural gated field emission sources for electron beam applications	Jones, G.W. Sune, C.T. Jones, S.K. Gray, H.F.	Proc. SPIE-Int. Soc. Opt. Eng., 1671 (Electron-Beam, X-Ray, Ion-Beam Submicrometer Lithogr. Manuf. II) (1992) 201-7
50	Barrier-resonance states in an external electric field	Jurczyszyn, L. Steslicka, M.	Surf. Sci. (1992) <u>266</u> , 141-4
51	A field-emission device employing a layer of single-crystal silicon and its preparation	Kane, R.C.	PCT Int. Appl. (Patent) WO 9204732 (1992)
52	Making a molded field-emission cathode employing a diamond coating	Kane, R.C. Jaskie, J.E.	U.S. Patent No. 5129850 (1992)
53	Field-emission display with vacuum seal	Kane, R.C. Jaskie, J.E. Parker, N.W.	U.S. Patent No. 5157304 (1992)
54	Nonhomogeneous multielemental electron emitter	Kane, R.C. Vasquez, B.	U.S. Patent No. 5156705 (1992)
55	Reactive ion etching techniques for silicon sidewall angle control in microengineering	Kim, J.M. Carr, W.N. Zeto, R.J. Poli, L.	J. Electrochem. Soc. (1992) <u>139</u> , 1700-5
56	Field-emission cathode having a semiconductor-metal eutectic composite microstructure	Kirkpatrick, D.A.	U.S. Patent No. 5138220 (1992)
57	Demonstration of vacuum field emission from a self-assembling biomolecular microstructure composite	Kirkpatrick, D.A. Bergeron, G.L. Czarnaski, M.A. Hickman, J.J. Chow, G.M. Price, R. Ratna, B.L. Schoen, P.E. Stockton, W.B. Baral, S. Ting, A.C. Schnur, J.M.	Appl. Phys. Lett. (1992) <u>60</u> , 1556-8
58	Analysis of field emission from three-dimensional structures	Kirkpatrick, D.A. Mankofsky, A. Tsang, K.T.	Appl. Phys. Lett. (1992) <u>60</u> , 2065-7
59	Field electron emitters	Komatsu, H.	Jpn. Kokai Tokkyo Koho (Patent) JP 04280030 (1992)
60	Multiple-electrode field-electron-emission device and its manufacture and driving	Komatsu, H.	Eur. Pat. Appl. (Patent) EP 513777 (1992)

*Field Emission Microscopy*

61	Changes in the morphology of Rh field emitter tips due to the reaction with carbon monoxide	Kruse, N. Gaussmann, A.	Surf. Sci. (1992) <u>266</u> , 51-5
62	A study on field-emission array pressure sensors	Lee, H.C. Huang, R.-S.	Sens. Actuators (1992) <u>A34</u> , 137-54
63	A theoretical study of field emission array for microsensors	Lee, H.-C. Huang, R.-S.	IEEE Trans. Electron Dev. (1992) <u>39</u> , 313-24
64	Field-emission spectrum of a nanometer-size supported gold cluster: theory and experiment	Lin, M.E. Reifenberger, R. Andres, R.P.	Phys. Rev. B: Condens. Matter (1992) <u>46</u> , 15490-7
65	Size-dependent field-emission spectra from nanometer-size supported gold clusters	Lin, M.E. Reifenberger, R. Ramachandra, A. Andres, R.P.	Phys. Rev. B: Condens. Matter (1992) <u>46</u> , 15498-502
66	Fabrication of self-aligned gated field emitters	Liu, D. Ravi, T.S. Bagley, B.G. Chin, K.K. Marcus, R.B.	J. Micromech. Microeng. (1992) <u>2</u> , 21-4
67	Cesiated thin-film field-emission microcathode arrays	Macaulay, J.M. Brodie, I. Spindt, C.A. Holland, C.E.	Appl. Phys. Lett. (1992) <u>61</u> , 997-9
68	Field emission cathode array coated with electron-work-function-reducing material, and method	Macaulay, J.M. Spindt, C.A. Holland, C.E. Brodie, I.	U.S. Patent No. 5089292 (1992)
69	Field emission from hafnium carbide	Mackie, W.A. Morrissey, J.L. Hinrichs, C.H Davis, P.R.	J. Vac. Sci. Technol. A (1992) <u>10</u> , 2852-6
70	100 kV thermal field emission electron beam lithography tool for high-resolution x-ray mask patterning	McCord, M.A. Viswanathan, R. Hohn, F.J. Wilson, A.D. Naumann, R. Newman, T.H.	J. Vac. Sci. Technol. B (1992) <u>10</u> , 2764-70

71	Studies on the nature of field emission sites	Moffat, D. Barnes, P. Flynn, T. Graber, J. Hand, L. Hartung, W. Hays, T. Kirchgessner, J. Knobloch, J. et al.	Part. Accel. (1992) <u>40</u> , 85-126
72	Spectral analysis of field emission current fluctuations from a carbon fiber field emitter	More, M.A. Joag, D.S.	J. Phys. D: Appl. Phys. (1992) <u>25</u> , 1844-7
73	Field electron emission studies on zinc oxide coated tungsten microemitters	Mousa, M.S.	Surf. Sci. (1992) <u>266</u> , 110-20
74	High-field ion sources and applications	Muehle, R.	Rev. Sci. Instrum. (1992) <u>63</u> , 3040-9
75	Thin-film cold cathode structure and flat screen display device containing it	Okamoto, S. Nakazawa, E.	Fr. Demande, (Patent) FR 2675306 (1992)
76	Cold-cathode field-emission device employing a current source means	Parker, N.W. Kane, R.C.	PCT Int. Appl. (Patent) WO 9205571 (1992)
77	An automatic field-emission tip conditioning system	Ruan, S. Kapp, O.H.	Rev. Sci. Instrum. (1992) <u>63</u> , 4056-60
78	High-temperature/ultrahigh vacuum compatible probe station	Santos, E.J.P.	Rev. Sci. Instrum. (1992) <u>63</u> , 3789-90
79	Atomic scale characterization of tungsten surface proposed from FEM images of a tip with and without adsorption	Sato, M.	Appl. Surf. Sci. (1992) <u>60-61</u> , 411-5
80	Field emission resonances studied with $dI/ds(V)$ and $dI/dV(V)$ curves	Scandella, L. Güntherodt, H.-J.	Ultramicroscopy (1992) <u>42-44</u> , 546-52
81	The behavior of LiF-coated metal anodes in pulsed electric fields	Schwoebel, P.R. Panitz, J.A.	J. Appl. Phys. (1992) <u>71</u> , 2151-4
82	Spark discharge at low pressure with a field cathode	Semenov, A.P.	Teplofiz. Vys. Temp. (1992) <u>30</u> , 36-41
83	Field emitters made of high- $T_c$ superconducting single crystals: preparation and spectrometric investigations	Shilimanov, S.N. Shkuratov, S.I. Ivanov, S.N.	Sov. Tech. Phys. Lett. (1992) <u>18</u> , 297-8; Pis'ma Zh. Tekh. Fiz. (1992) <u>18</u> (9), 57-60

*Field Emission Microscopy*

84	High temperature superconductors in strong electric fields	Shkuratov, S.I.	Surf. Sci. (1992) <u>266</u> , 88-99
85	Field electron microscopy and spectroscopy of HTSC perfect monocrystals	Shkuratov, S.I. Ivanov, S.N. Shilimanov, S.N.	Surf. Sci. (1992) <u>266</u> , 224-31
86	FEM study of oxidized tungsten surfaces	Sotola, J. Savkin, V. Knor, Z.	Collect. Czech. Chem. Commun. (1992) <u>57</u> , 2481-93
87	Microfabricated field-emission and field-ionization sources	Spindt, C.A.	Surf. Sci. (1992) <u>266</u> , 145-54
88	Field emission spectroscopy of potassium on single crystal planes of molybdenum	Stepien, Z.M.	Surf. Sci. (1992) <u>266</u> , 107-9
89	Fabrication of encapsulated silicon-vacuum field-emission transistors and diodes	Sune, C.T. Jones, G.W. Vellenga, D.	J. Vac. Sci. Technol. B (1992) <u>10</u> , 2984-8
90	Discharge tubes	Suzuki, S. Iketani, M. Sano, I.	Jpn. Kokai Tokkyo Koho. (Patent) JP 04149954 (1992)
91	Field-emission arrays - a potentially bright source	Tang, C.M. Ting, A.C. Swyden, T.	Nucl. Instrum. Methods Phys. Res., Sect. A (1992) <u>318</u> , 353-7
92	Fabrication of silicon field emission points for vacuum microelectronics by wet chemical etching. [Erratum to document cited in CA114(20):197685d]	Trujillo, J.T. Hunt, C.E.	Semicond. Sci. Technol. (1992) <u>7</u> , 441
93	Oscillatory behavior of the reduction of nitric oxide by hydrogen over rhodium	van Tol, M.F.H. Gielbert, A. Nieuwenhuys, B.E.	Catal. Lett. (1992) <u>16</u> , 297-309
94	Thermal roughening of FEM clean Pt {110} and its vicinal areas	Vanselow, R.	Surf. Sci. (1992) <u>279</u> , L213-8
95	The work function of kinked areas on clean, thermally rounded Pt and Rh crystallites: its dependence on the structure of terraces and edges	Vanselow, R. Li, X.Q.D.	Surf. Sci. Lett. (1992) <u>264</u> , L200: Erratum Surf. Sci. (1992) <u>273</u> , L487
96	Field emitter and its manufacture	Watanabe, H. Komatsu, H. Hasegawa, T. Ishimaru, T.	Eur. Pat. Appl. (Patent) EP 483814 (1992)

97	Array of field emission cathodes	Watanabe, H. Ohoshi, T.	Eur. Pat. Appl. (Patent) EP 503638 (1992)
98	Influence of space charge on field emission of electrons from sharp edges	Wheeler, C.B.	IEEE Proc. A (1992) <u>139</u> , 169-73
99	Absolute work function measurements with the retarding potential method utilizing a field emission electron source	Yamamoto, S. Watanabe, I. Sasaki, S. Yaguchi, T.	Surf. Sci. (1992) <u>266</u> , 100-6
100	Structures and processes for fabricating field emission cathodes	Zimmerman, S.M.	PCT Int. Appl. (Patent) WO 9202031 (1992)
101	Current stability and energy spread of tungsten [310] field emission	Zinzindohoue, P.	Optik (Stuttgart) (1992) <u>90</u> , 43-4



1	A simple model for the adsorption of a monovalent atom on a metal surface and the field desorption	Abarenkov, I.V. Bar'yudin, L.E.	J. Phys.: Condens. Matter (1992) <u>4</u> , 2239-46
2	Field-ion microscopy of the silicon (001) surface	Adachi, T. Ariyasu, T.	Philos. Mag. A (1992) <u>66</u> , 405-14
3	Classical dynamics of strong-field ionization	Bowden, C.M. Sung, C.C. Pethel, S.D. Ritchie, A.B.	Phys. Rev. A (1992) <u>46</u> , 592-6
4	Surface reactions in an external electrostatic field	Bragiel, P.	Surf. Sci. (1992) <u>266</u> , 35-9
5	Ion emission from tungsten tips in an electric field below the FIM level	Brueckner, M. Morgner, H.	Europhys. Lett. (1992) <u>18</u> , 469-73
6	The "collapsing ring" effect in the field evaporation of hot iridium	Butenko, V.G. Golubev, O.L. Kontorovich, E.L. Shrednik, V.N.	Sov. Tech. Phys. Lett. (1992) <u>18</u> , 275-6; Pis'ma Zh. Tekh. Fiz. (1992) <u>18</u> (8), 86-91
7	Surface tension of a tungsten single crystal surface reconstructed in an electric field	Butenko, V.G. Golubev, O.L. Shrednik, V.N.	Pis'ma Zh. Tekh. Fiz. (1992) <u>18</u> (19), 642-4
8	Field ionization distribution curves and the local electric field	Castilho, C.M.C.	J. Phys.: Condens. Matter (1992) <u>4</u> , 1039-46
9	Self-diffusion on reconstructed and nonreconstructed Ir surfaces	Chen, C. Tsong, T.T.	J. Vac. Sci. Technol. B (1992) <u>10</u> , 2178-84
10	Atomic replacement and adatom diffusion: Re on Ir surfaces	Chen, C. Tsong, T.T. Zhang, L. Yu, Z.	Phys. Rev. B (1992) <u>46</u> , 7803-7
11	An analysis of the optics of a field ionization ion source for application with a scanning proton microprobe	Colman, R.A. Allan, G.L. Legge, G.J.F.	Rev. Sci. Instrum. (1992) <u>63</u> , 5653-60
12	An atomic view of crystal growth	Ehrlich, G.	Appl. Phys. A (1992) <u>A55</u> , 403-10
13	Nanotips by reverse electrochemical etching	Fotino, M.	Appl. Phys. Lett. (1992) <u>60</u> , 2935-7
14	Self-diffusion on iridium(100). A structure investigation by field-ion microscopy	Friedl, A. Schütz, O. Müller, K.	Surf. Sci. (1992) <u>266</u> , 24-9

*Field Ion Microscopy*

15	Field ion microscopy of the CO-induced structural changes of Pd and Pt single crystal planes	Gaussmann, A. Kruse, N.	Surf. Sci. (1992) <u>266</u> , 46-50
16	Real-space imaging of the CO-induced (1 X 2) reconstructions of Pd(011) and (113)	Gaussmann, A. Kruse, N.	Surf. Sci. (1992) <u>279</u> , 319-27
17	A focused He <sup>+</sup> ion beam with a high angular current density	Hiroshima, H. Komuro, M. Konishi, M. Tsumori, T.	Jpn. J. Appl. Phys. (1992) <u>31</u> , 4492-5
18	Field ion microscopy of phase transformations in a copper-gold (Cu <sub>2</sub> Au) (platinum, palladium, silver) alloy	Ivchenko, V.A.	Surf. Sci. (1992) <u>276</u> , 273-80
19	Diffusion of Pd adatoms and stability of Pd overlayers on the (011) surface of Pt	Kellogg, G.L.	Phys. Rev. B (1992) <u>45</u> 14354-7
20	Surface diffusion of Pt adatoms on Ni surfaces	Kellogg, G.L.	Surf. Sci. (1992) <u>266</u> , 18-23
21	Chemical reactions in high electric fields	Kreuzer, H.J.	Surface Science of Catalysis: In Situ Probes and Reaction Kinetics, D.J. Dwyer and F.M. Hoffmann, eds., American Chemical Society, Washington, DC (1992) <u>482</u> , 268-86
22	Self-consistent calculation of atomic adsorption on metals in high electric fields	Kreuzer, H.J. Wang, L.C. Lang, N.D.	Phys. Rev. B (1992) <u>45</u> , 12050-55 - Report, TR-5; Order No. AD-A236 205, 24 pp. Avail. NTIS from: Gov. Rep. Announce. Index (U.S.) (1991) 91(19), Abstr. No. 151,769
23	Calculations of ionization rate-constants for the field-ion microscope	Lam, S.C. Needs, R.J.	Surf. Sci. (1992) <u>277</u> , 359-69
24	Field-ion microscope tunneling calculations for the aluminum (111) and (110) surfaces	Lam, S.C. Needs, R.J.	Surf. Sci. (1992) <u>277</u> , 173-83
25	Theory of the effects of image potentials on tunneling rates in the field-ion microscope	Lam, S.C. Needs, R.J.	Surf. Sci. (1992) <u>271</u> , 376-86
26	Field desorption of a Si atom from a metal surface	Lang, N.D.	Solid State Communications (1992) <u>84</u> , 155-8

27	Extraction of interaction energies from scanning-tunneling- and field-ion-microscopy data	Meyer, J.A.	Phys. Rev. Lett. (1992) <u>69</u> , 784-7
28	Fractal analysis of field evaporation micrographs of Fe-Cr alloys	Miller, M.K. Russell, K.F.	Surf. Sci. (1992) <u>266</u> , 232-6
29	Field evaporation of gold in single- and double-electrode systems	Miskovsky, N.M. Tsong, T.T.	Phys. Rev. B: Condens. Matter (1992) <u>46</u> , 2640-3
30	Field evaporation of silicon in the field ion microscope and scanning tunneling microscope configurations	Miskovsky, N.M. Wei, C.M. Tsong, T.T.	Phys. Rev. Lett. (1992) <u>69</u> , 2427-30
31	FIM observation of organic molecules	Morikawa, H. Iwatsu, F.	Densi Kenbikyo (1992) <u>26</u> , 222-5
32	Vapor deposition of chromium on a tungsten tip	Morikawa, H. Iwatsu, F. Terao, T.	Surf. Sci. (1992) <u>266</u> , 237-43
33	Laser-stimulated field desorption of organic molecules in high electric fields	Moskovits, E.V. Letokhov, V.S.	Surf. Sci. (1992) <u>266</u> , 81-7
34	High resolution tunneling microscopies: from FEM to STS	Nishikawa, O. Tomitori, M. Iwawaki, F.	Surf. Sci. (1992) <u>266</u> , 204-13
35	Field ion microscope studies of wear particle formation as related to the mesoscopic view of tribology	Ohmae, N.	Tribol. Ser. (1992) <u>21</u> (Wear Part.), 377-85
36	Field emission and field ion microscopy of a zirconated tungsten emitter	Pelleg, J. Liu, R.	Thin Solid Films (1992) <u>221</u> , 318-23
37	Characterization of STM W tips by FIM with an organic image gas	Schmidt, U. Rasch, H. Fries, Th. Röllgen, F.W. Wandelt, K.	Surf. Sci. (1992) <u>266</u> , 249-52
38	New method for producing sharp atomic protrusions on blunt tungsten tips	Sharma, A.K. Vispute, R.D. Ogale, S.B. Joag, D.S.	J. Vac. Sci. Technol. B (1992) <u>10</u> , 1208-10

*Field Ion Microscopy*

- 39 Field ion microscope study of high-temperature superconductor neodymium cerium copper oxide ( $\text{Nd}_{1.85}\text{Ce}_{0.15}\text{CuO}_4$ )  
Talantsev, E.F.  
Ivchenko, V.A.  
Kozhevnikov, V.L.  
Flyatau, E.E.  
Mod. Phys. Lett. B (1992) 6, 1029-35
- 40 Surface atomic structure of  $\text{YBa}_2\text{Cu}_3\text{O}_8$  high-temperature superconductor cathode in strong electric fields  
Talantsev, E.F.  
Ivchenko, V.A.  
Syutkin, N.N.  
Titova, S.G.  
Tolochko, S.P.  
Kononyuk, I.F.  
Sov. Tech. Phys. Lett. (1992) 18, 355-6; Pis'ma Zh. Tekh. Fiz. (1992) 18(11), 46-50
- 41 A field ion microscope study of the surface chemical reaction of tungsten with *n*-octanol under an applied positive voltage  
Terao, T.  
Iwatsu, F.  
Morikawa, H.  
Surf. Sci. (1992) 266, 244-8
- 42 Energetics of surface atomic processes  
Tsong, T.T.  
Springer Ser. Mater. Sci. (1992) 17 (Ordering Surf. Interfaces), 55-65
- 43 Precipitation in solids  
Ustinovshikov, Y.I.  
J. Mater. Sci. (1992) 27, 3993-4002
- 44 Design and performance of a novel field electron/field ion microscope combination based on image processing  
van Tol, M.F.H.  
Hondsmerk, F.A.  
Bakker, J.W.  
Nieuwenhuys, B.E.  
Surf. Sci. (1992) 266, 529-37
- 45 The interaction of a W/Re alloy tip with oxygen: an application of the novel field electron/field ion microscope combination based on image processing  
van Tol, M.F.H.  
Hondsmerk, F.A.  
Bakker, J.W.  
Nieuwenhuys, B.E.  
Surf. Sci. (1992) 266, 214-23
- 46 A study of laser-ion-deposited carbon films on tungsten by x-ray diffraction, field ion microscopy, and electron spectroscopy  
Wagal, S.S.  
Adhi, K.P.  
Joag, D.S.  
Sharma, A.K.  
Abhyandar, N.  
Kulkarni, S.K.  
J. Appl. Phys. (1992) 71, 1052-4
- 47 Atomic behavior at individual binding sites: Ir, Re, and W on Ir(111)  
Want, S.C.  
Ehrlich, G.  
Phys. Rev. Lett. (1992) 68, 1160-3
- 48 Direct observation of interactions between identical adatoms: Ir-Ir and Re-Re on W(110)  
Watanabe, F.  
Ehrlich, G.  
J. Chem. Phys. (1992) 96, 3191-9

- 1 Investigation of surface diffusion by analysis of field emission current fluctuations Beben, J. Solid State Phenomena (1990) 12, 17-38
- 2 Work function, structure and phase transitions of lithium on tungsten Biernat, T. Solid State Phenomena (1990) 12, 61-72
- 3 The applications of atom-probe techniques in the study of nickel base superalloys Blavette, D. Menand, A. Bostel, A. Advanced Materials and Processing Techniques for Structural Applications, Paris, Sept. 7-9, 1987, T. Khan and A. Lasalmonie, eds., (1987) 101-9
- 4 The thermal ageing of single phase ferritic and duplex stainless steels Brown, J.E. Pumphrey, P.H. Smith, G.D.W. Duplex Stainless Steels '91, J. Charles and S. Bernhardsson, eds., Les Editions de Physique, Paris, France (1991) 2, 737-46
- 5 Thermodynamic and structural properties of individual nanometer-size supported metallic clusters Castro, T. Choi, E. Li, Y. Z. Andres, R.P. Refenberger, R. Mat. Res. Soc. Symp. Proc. (1991) 206, 159-68
- 6 Characterization of duplex stainless steels by TEM, SANS, and APFIM techniques Chung, H.M. Chopra, O.K. Charact. Adv. Mater., [Proc. Int. Metallogr. Soc. Symp.] 1987, W. Altergott and E.G. Henneke, eds., Plenum, New York (1990) 123-47
- 7 The cross-correlation function of field emission flicker noise and its applications to surface diffusion Dabrowski, A.M. Solid State Phenomena (1990) 12, 39-48
- 8 Interface studies of high- $T_c$  superconductors by field-ion and electron energy spectroscopy Ernst, N. Schmidt, W.A. Bozdech, G. Naschitzki, M. Melmed, A.J. Proc. ICMC '90 Topical Conf. on Materials Aspects of High-Temperature Superconductors, H.C. Freyhardt, R. Flükiger and M. Peuckert, eds., DGM Informationsgesellschaft, Verlag Oberursel, Germany (1991) 2, 859-64
- 9 Direct electron microscope observations of the formation of microscopic protuberances on the close-packed faces of single-crystal tungsten in a strong electric field Fursei, G.V. Movchan, B.N. Shvarkunov, V.A. Sov. Tech. Phys. Lett. (1990) 16(10), 782-4; Pis'ma Zh. Tekh. Fiz. (1990) 16(20), 42-6f
- 10 Spectral analysis of adsorbate induced field-emission flicker noise Gesley, M.A. Swanson, L.W. Phys. Rev. B (1983) 32, 7703-12

*Addendum*

- 11 Secondary electron field emission from silica and alternative insulating layers Hecht, D.  
Fitting, H.J. Exp. Tech. Phys. (1991) 39, 185-97
- 12 Measurement of the first particle size of ultrafine particles Hu, R.  
Zhang, W.  
Zhao, X.  
Cui, Y.  
Zhang, M. Gaojishu Tongxin (1991) 1, 11-13
- 13 Cascade cold cathode field emission device Kane, R.C. Faming Zhuanli Shenqing Gongkai Shuomingshu (Patent) CN 1056376 (1991)
- 14 Measurement of the dipole moments of single 5-d transition metal adatoms on the tungsten (110) plane Kellogg, G.L.  
Tsong, T.T. Surf. Sci. (1977) 62, 343-60
- 15 Electromagnetic evaporation of samples and probes in STM Kobayashi, A.  
Grey, F.  
Aono, M. Kagaku Kogyo (1991) 42, 944-51
- 16 Mass and energy analyses of field emitted ions and measurement of the binding energy of surface atoms Liu, J. 152 pp., Avail. Univ. Microfilms Int., Order No. DA9214224 From: Diss. Abstr. Int. B 1992, (1991) 52(12, Pt. 1), 6475-6
- 17 Critical review of surface diffusion parameters of potassium on tungsten Meclewski, R. Solid State Phenomena (1990) 12, 49-60
- 18 Contamination test of a cesium field ion thruster Mitterauer, J. J. Propul. Power (1991) 7, 364-7
- 19 Microscopic examination of field emission areas in superconducting niobium cavities Moffat, D.  
Flynn, T.  
Hand, L.  
Kirchgessner, J.  
Noer, R.  
Padamsee, H.  
Rubin, D.  
Sears, J.  
Shu, Q. Conf. Rec. IEEE Part. Accel. Conf., 14th IEEE: New York (1991) 1, 21-3
- 20 Ultramicroanalysis utilizing electron tunneling Nishikawa, O.  
Tomitori, M.  
Iwawaki, F. Anal. Sci. (1991) 7 (Suppl., Proc. Int. Congr. Anal. Sci., 1991, Pt. 2), 1225-30
- 21 Slanted conducting boundaries and field emission of particles in an electromagnetic particle simulation code Pointon, T.D. J. Compu. Phys. (1991) 96, 143-62
- 22 Microstructural characterization of defects and mechanisms (including field-ion observations) Ralph, B. Adv. Phys. Metall., J.A. Charles and G.C. Smith, eds., Inst. Met.: London, UK (1990) 119-39

23	Surface conduction-induced electron-emitting element and manufacture thereof	Saito, N. Takagi, H. Ogawa, H. Yamazaki, Y. Nomura, I.	Jpn. Kokai Tokkyo Koho. (Patent) JP 03127428 (1991)
24	Study of surface-diffusion of lithium on molybdenum	Snitko, A.O.	Ukr. Fiz. Zh (1991) <u>36</u> , 1561-8
25	Visible local instabilities of the FIM image of metal surfaces	Surma, S.	Solid State Phenomena (1990) <u>12</u> , 129-38
26	Calculation of the local radius of curvature of the surface of a $\text{RBa}_2\text{Cu}_3\text{O}_{7-x}$ field emission tip	Talantsev, E.F. Ivchenko, V.A. Syutkin, N.N.	Sov. Tech. Phys. Lett. (1991) <u>17</u> , 573-4; Pis'ma Zh. Tekh. Fiz. (1991) <u>17</u> (16), 8-12
27	Theoretical study of collimated field emission of electrons from a point source	Tekman, E. Ciraci, S. Baratoff, A.	Phys. Rev. B (1990) <u>42</u> , 9221-4
28	Electron transfer mechanisms in surface dynamical processes	Tsukada, M. Shima, N. Tsuneyuke, S.	Surf. Sci. (1987) <u>26</u> , 47-61
29	Secondary hardening mechanism of alloy steels	Ustinovshchikov, Yu.-I.	Metal Sci. (1984) <u>18</u> , 337-44
30	Microanalysis of the matrix and the oxide-metal interface of uniformly corroded zircaloy	Wadman, B. Andren, H.-O.	Zirconium in the Nuclear Industry, Ninth Int. Symp., ASTM STP 1132, C.M. Eucken and A.M. Garde, eds., American Society for Testing and Materials, Philadelphia, PA (1991) 461-75
31	Microstructural influence on uniform corrosion of zircaloy nuclear fuel claddings	Wadman, B. Andren, H.-O. Nystrom, A.-L. Rudling, P. Pettersson, H.	J. Nucl. Mater. (1991) <u>200</u> , 207-17
32	Dynamic image potentials and field emission	Wu, J.-W. Mahan, G.D.	Phys. Rev. B (1983) <u>28</u> , 4839-41
33	Electron field emission in porous silicon	Yue, W.K.	93 pp., Avail. Univ. Microfilms Int., Order No. DA9206585 From: Diss. Abstr. Int. B 1992, (1991) <u>52</u> , 4914
34	Thermionic-field emission in reverse-biased aluminum/gallium arsenide Schottky diodes	Zaidi, S.H. Haq, M.S.	Karachi Univ. J. Sci. (1991) <u>12</u> , 105-9



**APPENDIX**

The reports and dissertations listed in the bibliography may generally be obtained through one of the following agencies:

National Technical Information  
U. S. Department of Commerce  
5285 Port Royal Road  
Springfield, VA 21161 USA

Telephone: (703) 487-4650

University Microfilms Int.  
Dissertation Information Service  
300 North Zeeb Road  
Ann Arbor, MI 48106 USA

Telephone: (800) 521-3042 (Toll Free)  
or (313) 761-4700



**INTERNAL DISTRIBUTION**

- 1-2. Central Research Library
- 3. Document Reference Section
- 4-5. Laboratory Records Department
- 6. Laboratory Records, ORNL RC
- 7. ORNL Patent Section
- 8-10. M&C Records Office
- 11. Alexander, K. B.
- 12. Alexander, M. B.
- 13. Babu, S. S.
- 14. Bentley, J.
- 15. Bloom, E. E.
- 16. Craig, D. F.
- 17. Godfrey, R. D.
- 18. Horton, J. A.
- 19. Horton, L. L.
- 20. Hulett, L. D.
- 21. Jayaram, Raman
- 22. Kenik, E. A.
- 23-73. Miller, M. K.
- 74. More, K. L.
- 75-77. Russell, K. F.

**EXTERNAL DISTRIBUTION**

- 78. Dr. Raoulf Z. Bakhtizin  
Department of Physical Electronics  
Bashkir State University  
32 Frunze Street  
450074 Ufa  
Russia
- 79. Prof. Didier Blavette  
Laboratoire de Microscopie Ionique-URA CNRS 808  
Faculté des Sciences et Techniques BP 118  
Place Emile Blondel  
76134 Mont Saint Aignan Cedex  
France
- 80. Prof. Jochen H. Block  
Fritz-Haber Institut MPG  
Faradayweg 4-6  
W-1000 Berlin 3  
Germany

81. Dr. M. G. Burke  
Westinghouse R&D Center  
1310 Beulah Road  
Pittsburgh, PA 15235  
USA
82. Dr. Patrick P. Camus  
University of Wisconsin  
Applied Superconductivity Center  
1500 Johnson Drive  
Madison, WI 53706  
USA
83. Dr. Alfred Cerezo  
Department of Materials  
University of Oxford  
Parks Road  
Oxford OX1 3PH  
United Kingdom
84. Dr. Gaik-Khuan Chuah  
Department of Chemistry  
National University of Singapore  
10 Kent Ridge Crescent  
Singapore 0511  
Singapore
85. Dr. Antoin Ciszewski  
University of Wroclaw  
Institute of Experimental Physics  
ul. Cybulskiego 36  
50-205 Wroclaw  
Poland
86. Dr. Chuck Crawford  
Kimball Physics Inc.  
Kimball Hill Road  
Wilton, NH 03086  
USA
87. Prof. C. M. C. de Castilho  
Instituto de Física UFBA  
Campus da Ferderacão  
40210-360 Salvador  
Bahia Brazil
88. Dr. Michael Drechsler  
CRMC2 CNRS  
University d'Aix-Marseille  
Campus Luminy Case 913  
13288 Marseille Cedex 9  
France

89. Prof. Gert Ehrlich  
University of Illinois  
Coordinator, Science Lab  
1101 W. Springfield  
Urbana, IL 61801  
USA
90. Dr. Norbert Ernst  
Fritz-Haber-Institut der Max-Planck-Gesellschaft  
Faradayweg 4-6  
W1000 Berlin 33  
Germany
91. Dr. Richard G. Forbes  
University of Surrey  
Department of Electronic and Electrical Engineering  
Guildford, Surrey GU2 5XH  
UK
92. Prof. Georg H. Frommeyer  
MPI fur Eisenforschung  
Max-Planck-Str 1  
D-4000 Dusseldorf 1  
Germany
93. Dr. O. L. Golubev  
Institute for Analytical Instrumentation  
Russian Academy of Science  
26 Ogorodnikova  
198103 St. Petersburg  
Russia
94. Prof. Yun-Ming Gong  
Beijing University  
Department of Radio-Electronics  
Beijing 100871  
P.R. China
95. Dr. Peter Häasen  
Institut für Metallphysik  
University of Göttingen  
Hopitalstrasse 3/7  
D-37073 Göttingen  
Germany
96. Dr. Kazuhiro Hono  
Tohoku University  
Institute for Materials Research  
2-1-1 Katahira, Aoba-ku  
Sendai 980  
Japan

97. Prof. John J. Hren  
North Carolina State University  
Department of Materials Science and Engineering  
Raleigh, NC 27695-7907  
USA
98. Dr. Jonathan Hyde  
Department of Materials  
University of Oxford  
Parks Road  
Oxford OX1 3PH  
United Kingdom
99. Dr. V. A. Ivchenko  
Russian Academy of Sciences  
Institute of Electrophysics, Ural Division  
34 Komsomolskaya Str.  
Ekaterinburg 620219  
Russia
100. Dr. Gary L. Kellogg  
Sandia National Labs  
Org. 1114  
P.O. Box 5800  
Albuquerque, NM 87185  
USA
101. Prof. Erich A. P. Krautz  
Institut Für Festkörperphysik  
T.U. Graz  
Petersgasse 16  
A-8010 Graz  
Austria
102. Prof. Hans J. Kreuzer  
Dalhousie University  
Department of Physics  
Halifax, Nova Scotia B3H 3J5  
Canada
103. Prof. Wu Liu  
Huazhong Normal University  
Department of Physics  
Wuhan, Hubei  
P.R. China
104. Dr. Marcello F. Lovisa  
Friedrichstädter Str. 43A  
D-2370 Rendsburg  
Germany

105. Dr. Ross A. D. Mackenzie  
Department of Materials  
University of Oxford  
Parks Road  
Oxford OX1 3PH  
United Kingdom
106. Dr. E. Mahner  
University of Wuppertal  
Department of Physics  
Gaubstr. 20  
5600 Wuppertal  
Germany
107. Dr. G. M. McClelland  
IBM Research Division  
Almaden Research Center  
650 Harry Rd  
San Jose, CA 95120-6099  
USA
108. Dr. Allan J. Melmed  
Johns Hopkins University  
Department of Materials Science and Engineering  
3400N Charles Street  
Baltimore, MD 21218  
USA
109. Dr. Alain Menand  
Laboratoire de Microscopie Ionique  
UACNRS 808 University de Rouen  
Faculte Des Sciences BP 118  
76134 Mont Saint Aignan Cedex  
France
110. Prof. Johannes Mitterauer  
Technische Universitat Wien  
Institute fur Allgemeine und Elektronik  
Gusshausstrasse 27-29  
A 1040 Wien  
Austria
111. Prof. Marwan S. Mousa  
Fritz-Haber-Institut MPG  
Faradayweg 4-6  
W-1000 Berlin 33  
Germany
112. Dr. Bernard Nieuwenhuys  
Leiden University  
Department of Heterogeneous Catalysis  
PO Box 9502  
2300 RA Leiden  
The Netherlands

113. Prof. Osamu Nishikawa  
Kanazawa Institute of Technology  
Department of Electronics  
7-1 Ohogigaoka  
Kanazawa-South  
Kanazawa I. T.  
Japan
114. Prof. Eiichi Nomura  
Aono Atomcraft Project  
Kaga, 1-7-13  
Itabashi-ku  
Tokyo 173  
Japan
115. Prof. Dagang Ren  
Academia Sinica  
Institute of Metals Research  
Wenhua Road 72  
Shenyang 110015  
P.R. China
116. Prof. Duomin Ren  
University of Science and Technology of China  
Center of Fundamental Physics  
Hefei, Anhui 230026  
P.R. China
117. Dr. Ulf Rolander  
AB Sandvik Coromant  
R&D Materials and Processed  
S-12680 Stockholm  
Sweden
118. Prof. David N. Seidman  
Northwestern University  
2145 Sheridan Road  
Department of Materials Science and Engineering  
Evanston, IL 60201-3108  
USA
119. Keesam Shin  
506 J. Eagle Hts.  
Madison, WI 53706
120. Dr. V. N. Shrednik  
Ioffe Physical Technical Institute  
of the Academy of Science  
Polytekhnicheskaya 26  
194021 Leningrad  
Russia

121. Dr. George D. W. Smith  
Department of Materials  
University of Oxford  
Parks Road  
Oxford OX1 3PH  
United Kingdom
122. Dr. E. F. Talantsev  
Russian Academy of Sciences  
Institute of Electrophysics, Urals Division  
34 Komsomolskaya Str.  
Ekaterinburg 620219  
Russia
123. Dr. Rachel Thomson  
Department of Materials Science and Metallurgy  
University of Cambridge  
Pembroke Street  
Cambridge CB2 3QZ  
United Kingdom
124. Dr. Maurits van Tol  
Leiden University  
Gorlueus Laboratory  
PO Box 9502  
2300 RA Leiden  
The Netherlands
125. Dr. Nelia Wanderka  
Hahn-Meitner-Institut, N5  
Glienicker Str. 100  
D-14109 Berlin  
Germany
126. Prof. K. Watanabe  
Science University of Tokyo  
Department of Physics  
1-3 Kagurazaka, Shinjuku-ku  
Tokyo 162  
Japan
127. Prof. Masahiko Yamamoto  
Department of Materials Science and Engineering  
Osaka University  
2-1 Yamadaoka, Suita  
Osaka 565  
Japan
128. DOE Oak Ridge Operations Office  
Office of Assistant Manager for  
Energy Research and Development  
PO Box 2001  
Oak Ridge, TN 37831  
USA

129-138. Department of Energy  
Office of Scientific and Technical Information  
PO Box 62  
Oak Ridge, TN 37831  
USA

For distribution by microfiche as shown in DOE/TIC-4500  
Distribution Category UC-404 (Materials)